United States Department of Agriculture
Forest Service
NA
180 Canfield Street
Morgantown
West Virginia 26505
File Code:
Route to:

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Subject: Red Rot Fungi of Black Cherry

To: Bob White
Stan Kobielski

Gents,

I have identified that large fungus we observed on a cherry stump last Thursday (30 July 98) it was ***Bondarzewia berkeleyi.*** As this fungus was previously known as *Polyporus berkeleyi,* I suggest we adopt ``Berkeley's polypore' as a common name for it.

Documentation of Berkeley's ploypore as a decay fungus of Allegheny grown Black Cherry can be found in Davidson and Campbell's 1943 Phytopathology article (Phytopath, 33 (11): 965- *985, copy in ANF SO file*). *B. berkeleyi* is white rot fungus causing a butt rot of cherry. Being a white rot fungus it has the ability to degrade both lignin and cellulose, producing a yellowish colored decay.

In the simplest explanation of wood, it can be viewed as being made up of chains of cellulose imbedded in a matrix of lignin. Thus decay fungi need enzymes to degrade both the lignin and cellulose components of wood. Pathologists divide decay fungi into two major groups: the white rots and the brown rots. Brown rot fungi have enzymes that degrade **cellulose only** and consequently they leave the lignin essentially unaltered. The final product of brown rot fungi is a brown colored rotted wood, which is often dry and crumbly in nature. For this reason I would expect ``Red Rot' of black cherry to be the product of a group of brown rot fungi. In contrast those fungi with the enzymes to decay **both cellulose and lignin** produce rots which are often, white in color, soft and spongy. This kind of rot is more complete than the brown rots.

As cherry heartwood is dark in color the early decay by white rot fungi might be expected to be brown to yellowish in color. Davidson and Campbell (1943) describe *B. berkeleyi* as causing a light brown or yellowish, soft, flaky, butt rot. For the purposes of my investigation into Red Rot of Black Cherry I plan to include *B. berkeleyi* among the causes of red rot. Of the 66 butt rot fungal isolations made by Davidson and Campbell (1943) the second most common was that of Berkeley's Polypore although it accounted for only 14% of the decay. Further, the authors state that the decay column goes only a short distance into the butt log. Thus even with this fungus in the stump it should be possible to cut full-length boards from the outer part of the butt log.

Next time I'm up on the ANF I plan to conduct a preliminary survey of red rot in one stand that Randy Durner located for me. Soon there after we can sit down with the data I have generated and decide where we go from here. At this stage I am inclined to think that digitizing the map of historical fires ought to be a high priority. But more later.

/s/
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